COMPENSATED DENSITY/NEUTRON PE LOG

Company WOOLSEY OPERATING COMPANY, LLC.
Well McELWAIN #1
Field JOY STATION
County KIOWA State KANSAS
Location: API # : 15-097-21849-0000
1150' FNL & 1800' FEL
SEC 20 TWP 28S RGE 19W

Other Services
DIL/SON

Elevation
K.B. 2300
D.F. 2298
G.L. 2288

Permanent Datum GROUND LEVEL Elevation 2288
Log Measured From KELLY BUSHING 12' A.G.L
Drilling Measured From KELLY BUSHING

Company	WOOLSEY OPERATING COMPANY, LLC				
Well	McELWAIN #1				
Field	JOY STATION				
County	KIOWA				
State	KANSAS				
Date	2/13/19				
Run Number	ONE				
Depth Driller	5022				
Depth Logger	5024				
Bottom Logged Interval	5000				
Top Log Interval	2400				
Casing Driller	10 3/4" @ 395'				
Casing Logger	395				
Bit Size	7 7/8				
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 7000 PPM			
Density / Viscosity	9.2/67				
pH / Fluid Loss	10.0/8.8				
Source of Sample	FLOWLINE				
Rm @ Meas. Temp	.50 @ 60F				
Rmf @ Meas. Temp	.37 @ 60F				
Rmc @ Meas. Temp	.60 @ 60F				
Source of Rmf / Rmc	MEASUREMENT				
Rm @ BHT	.24 @ 125F				
Time Circulation Stopped	2 HOURS				
Time Logger on Bottom	////				
Maximum Recorded Temperature	125F				
Equipment Number	3802				
Location	HAYS, KANSAS				
Recorded By	JASON CAPPELLUCCI				
Witnessed By	BILL KLAVER				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

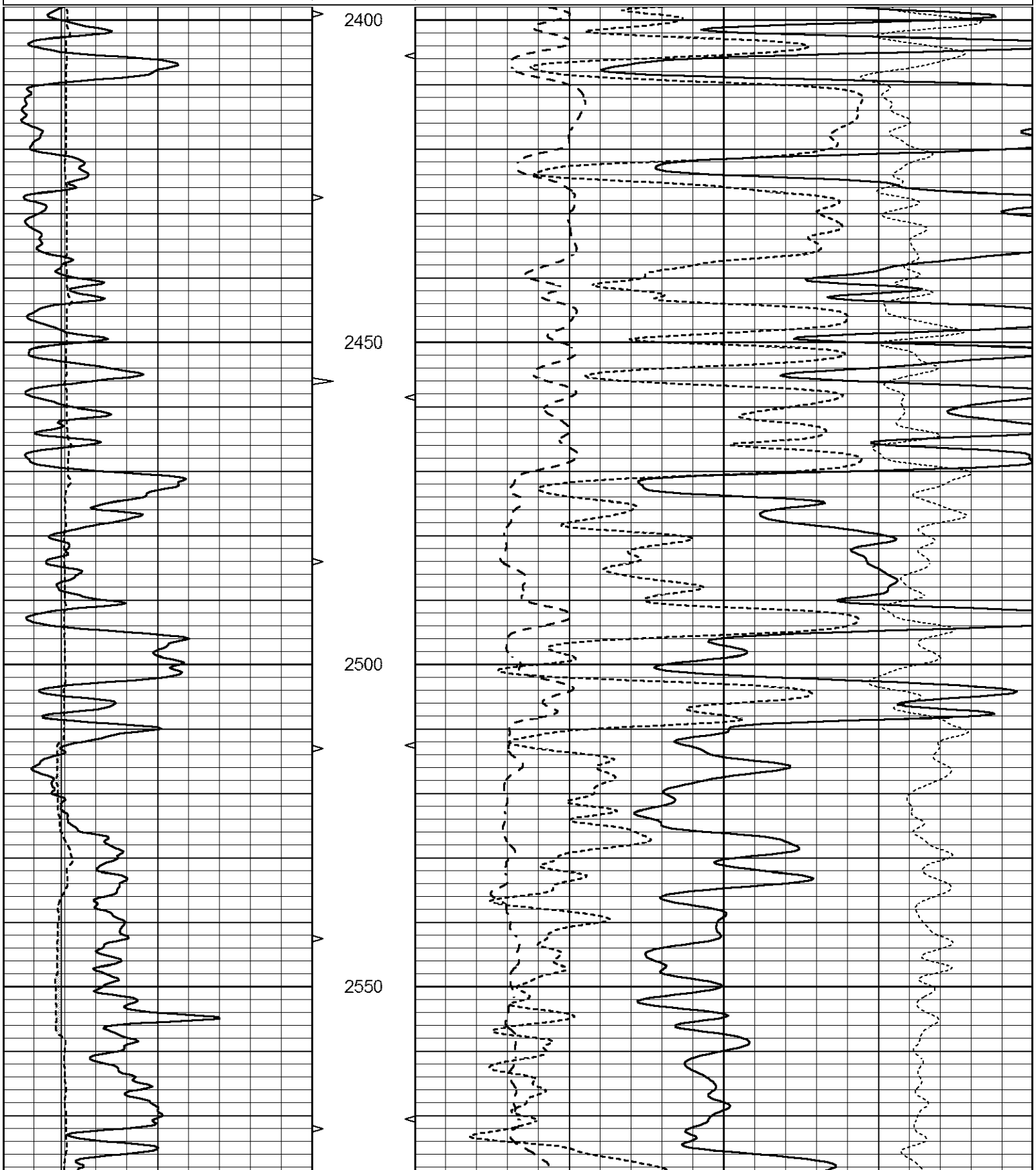
Comments

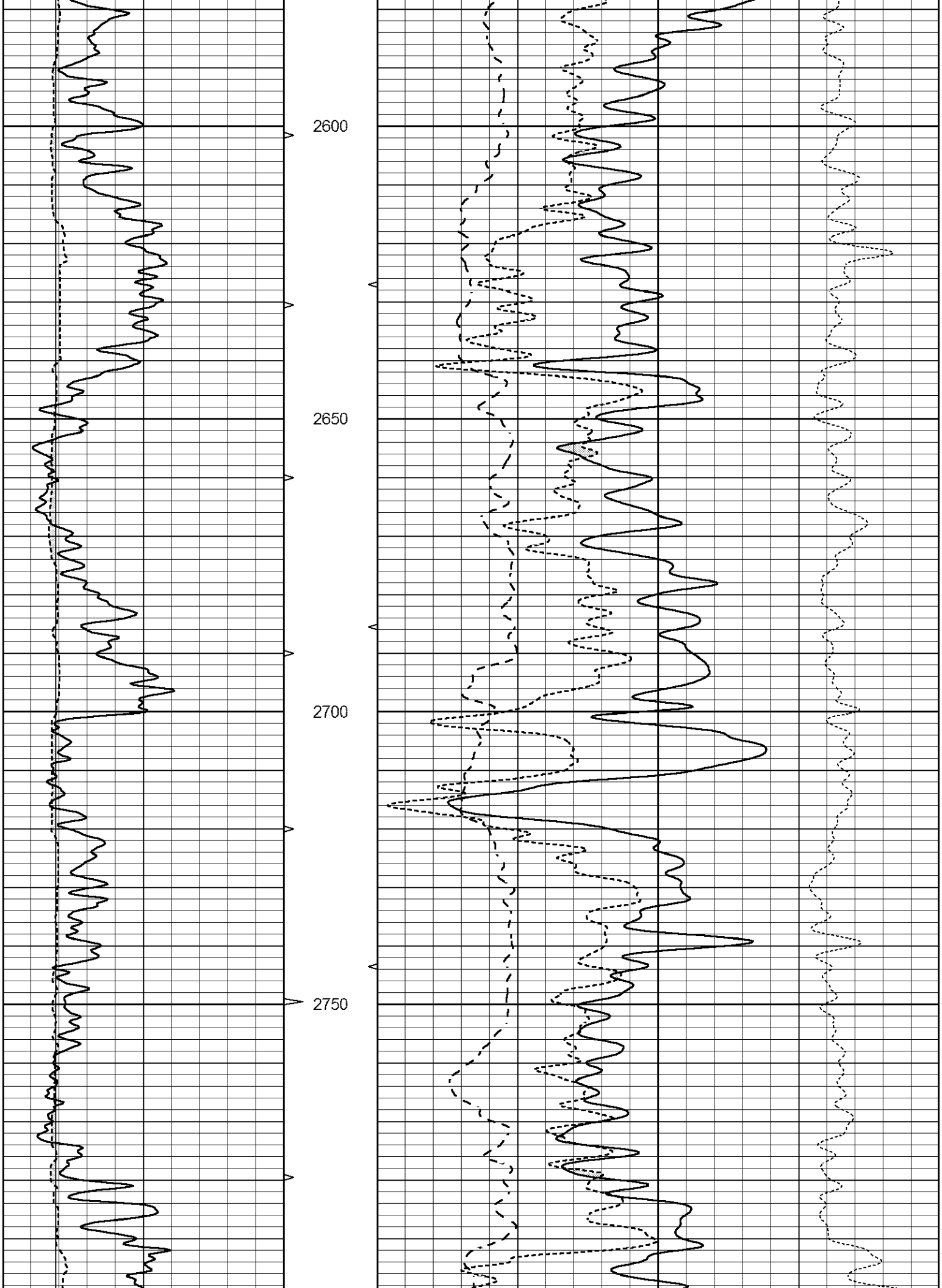
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
GREENSBURG, KS. - WEST TO MULLINVILLE GAS PLANT - 1 NORTH TO J RD.
3/4 WEST - SOUTHEAST INTO

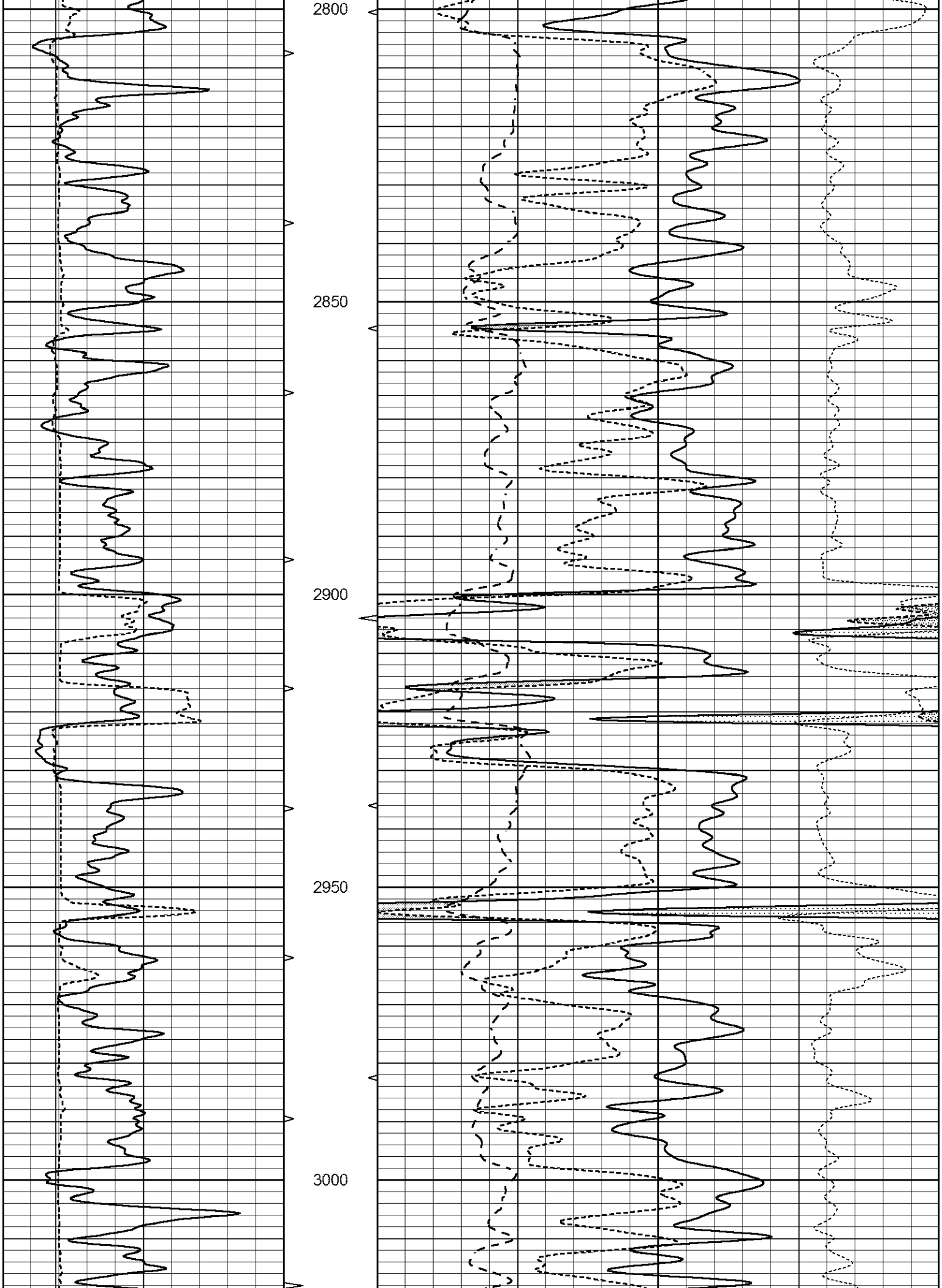
MAIN SECTION

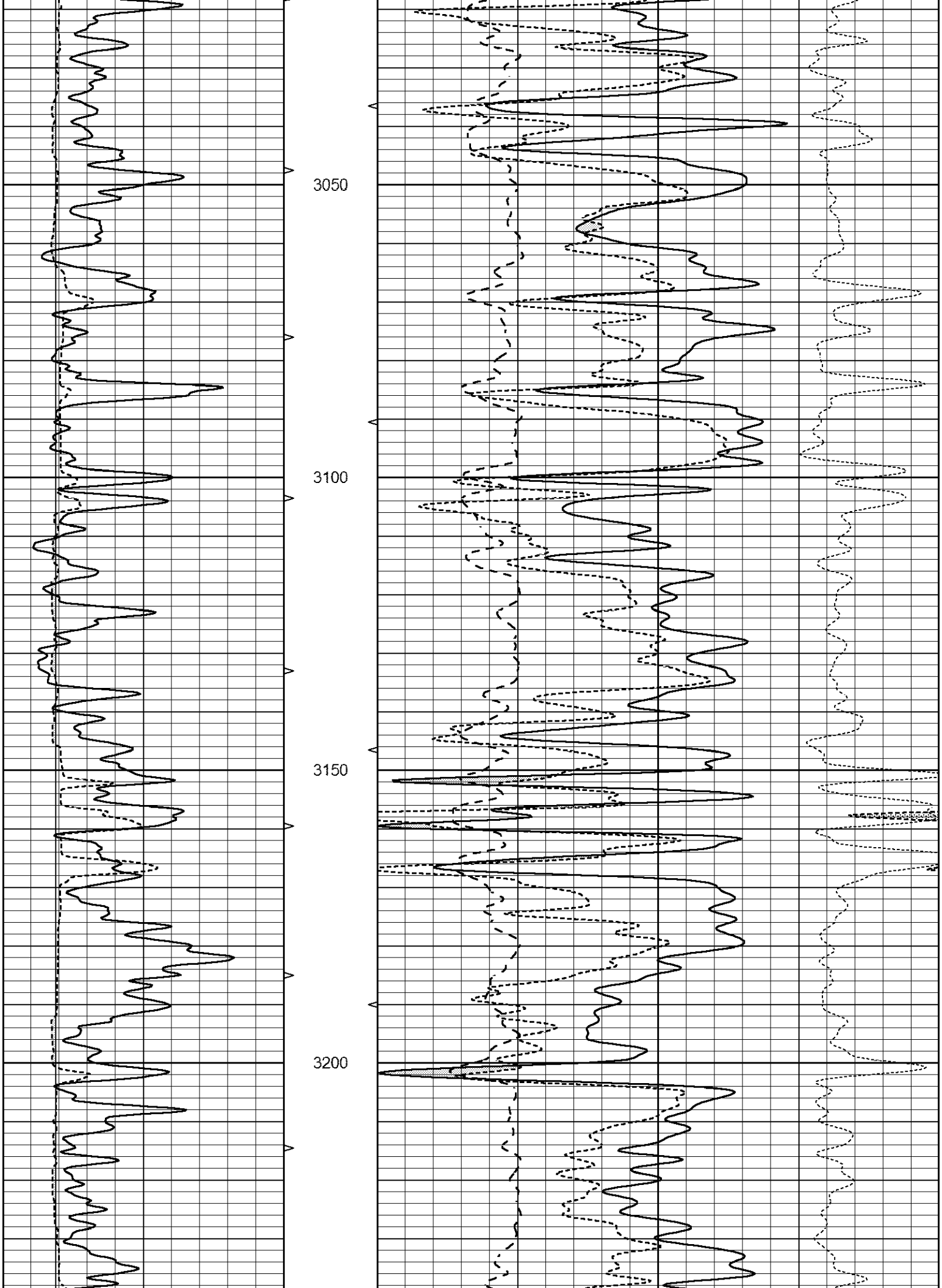
Database File	3443pe8.db
Dataset Pathname	pass3.1
Presentation Format	_ldt_neu
Dataset Creation	Wed Feb 13 05:09:44 2019
Charted by	Depth in Feet scaled 1:240

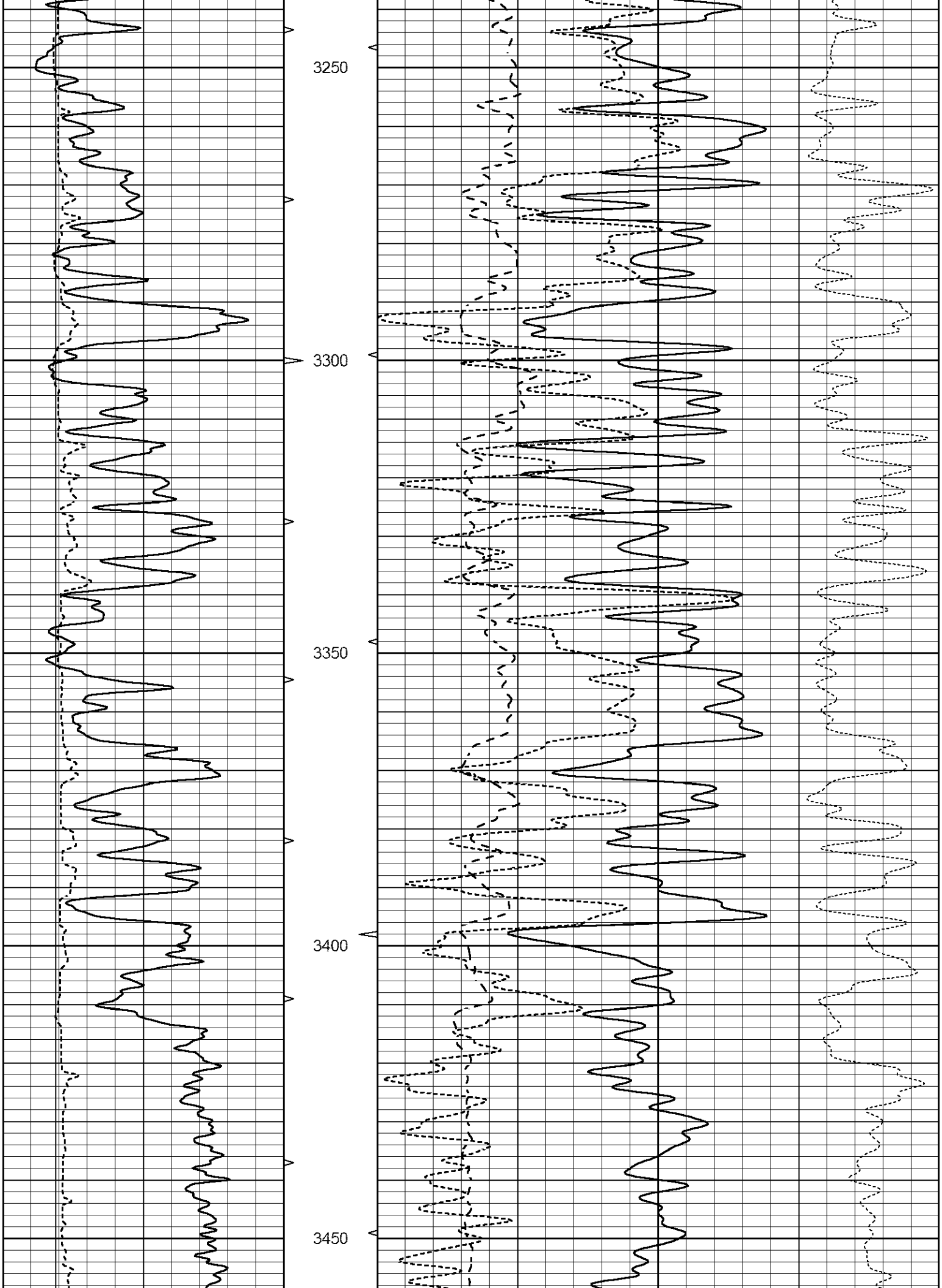
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)		-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)		-10
			TBHV	0	PE	10 -0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10				

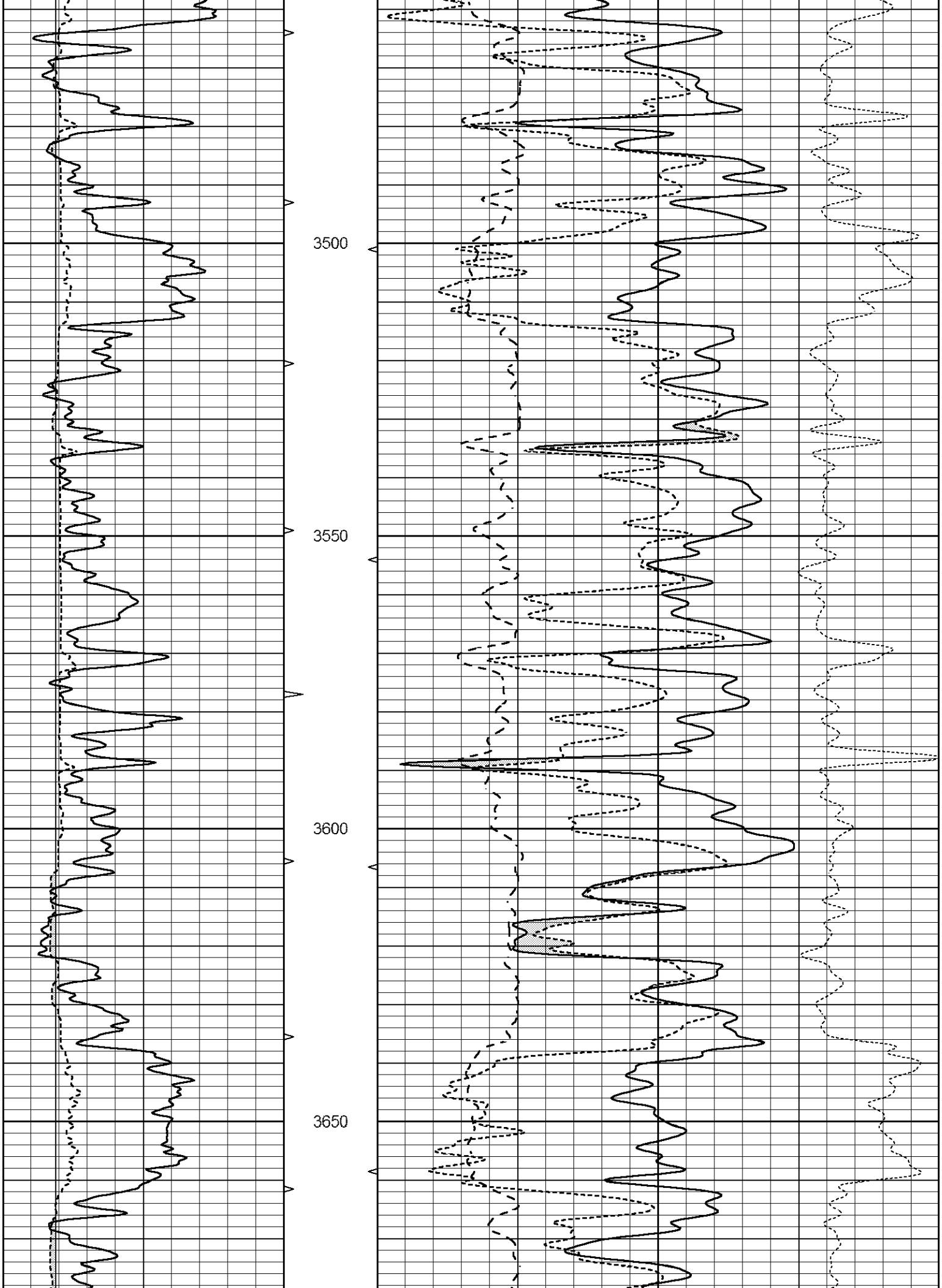


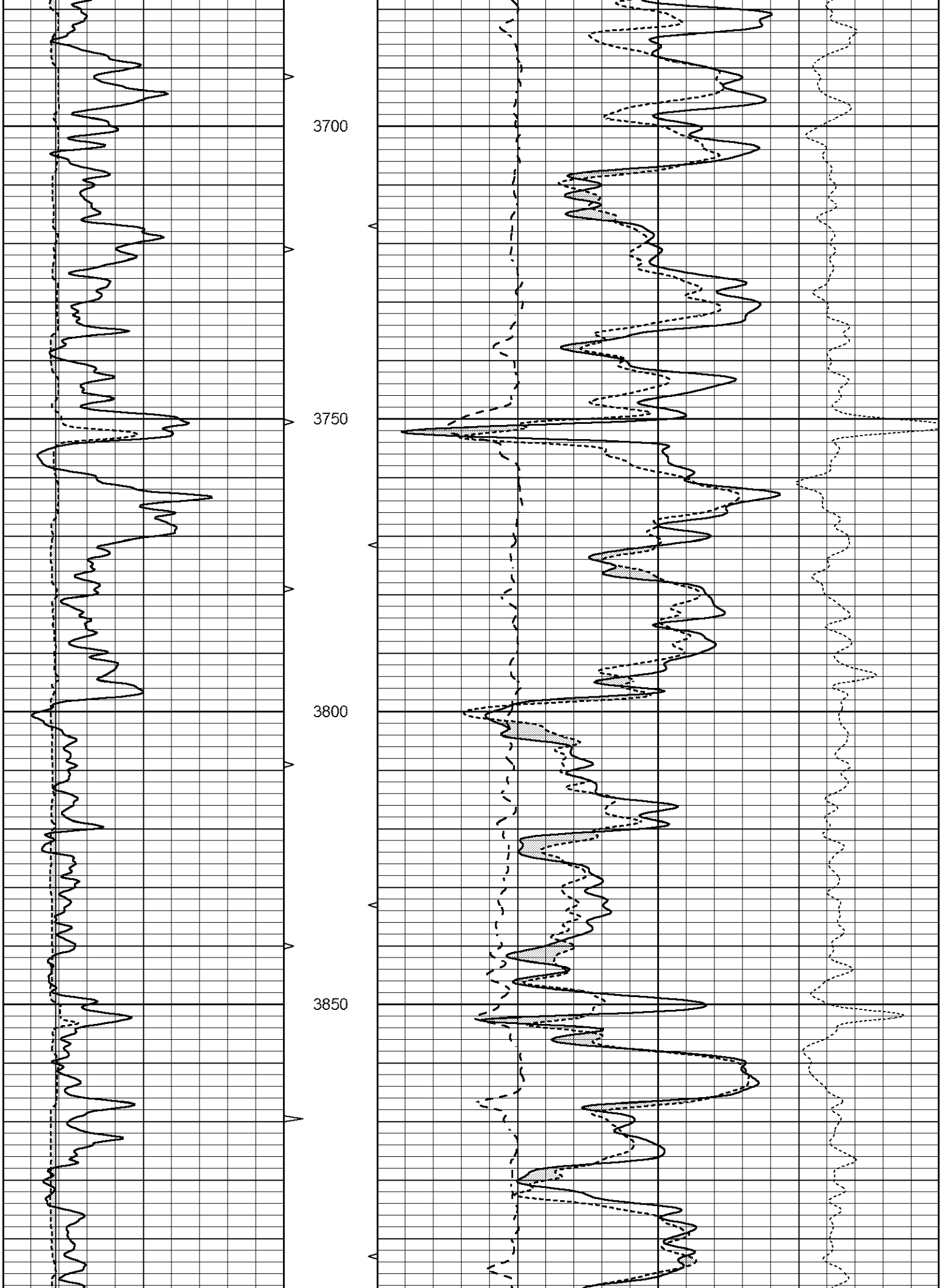

2600
2650
2700
2750

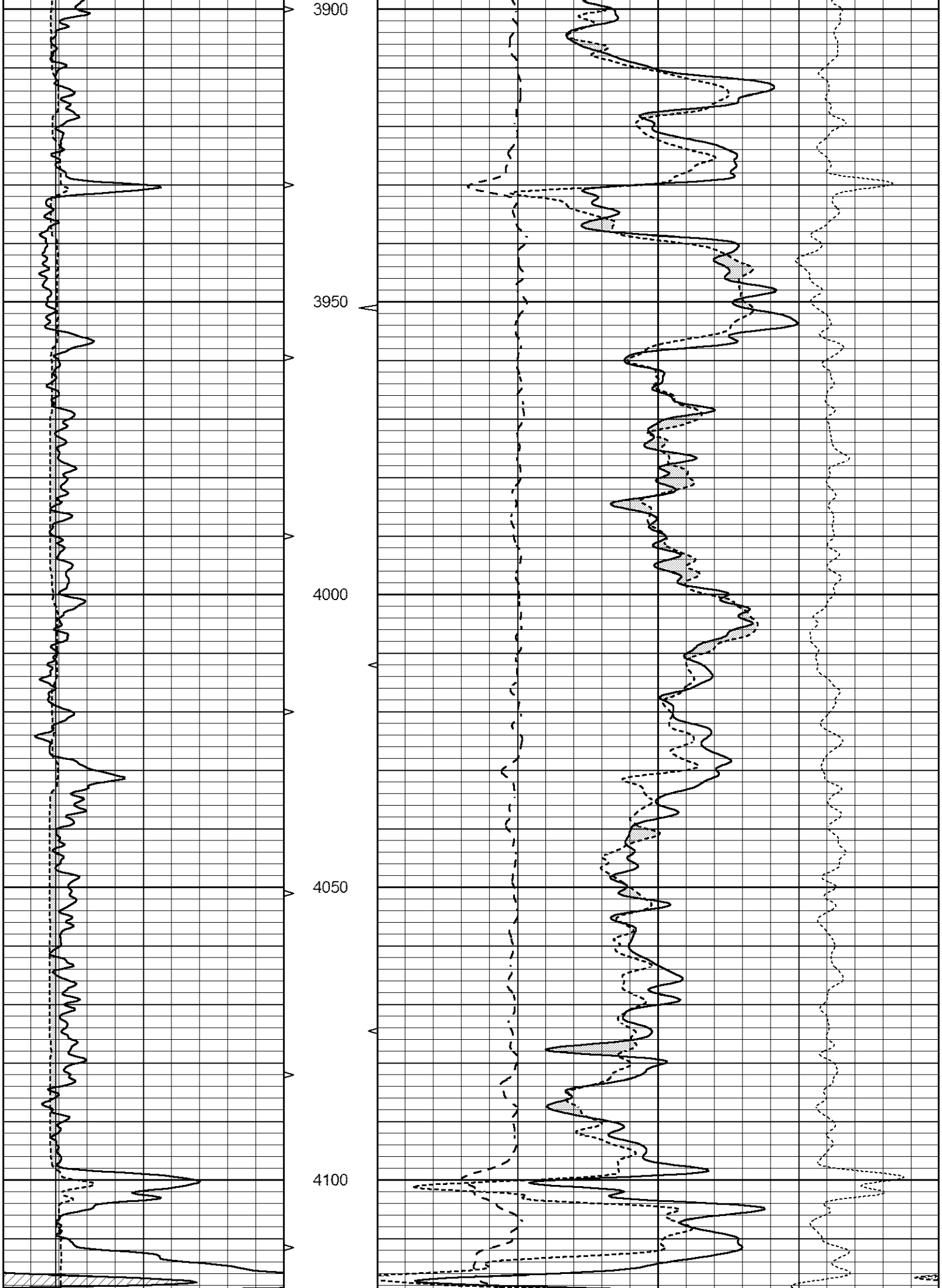

2800
2850
2900
2950
3000

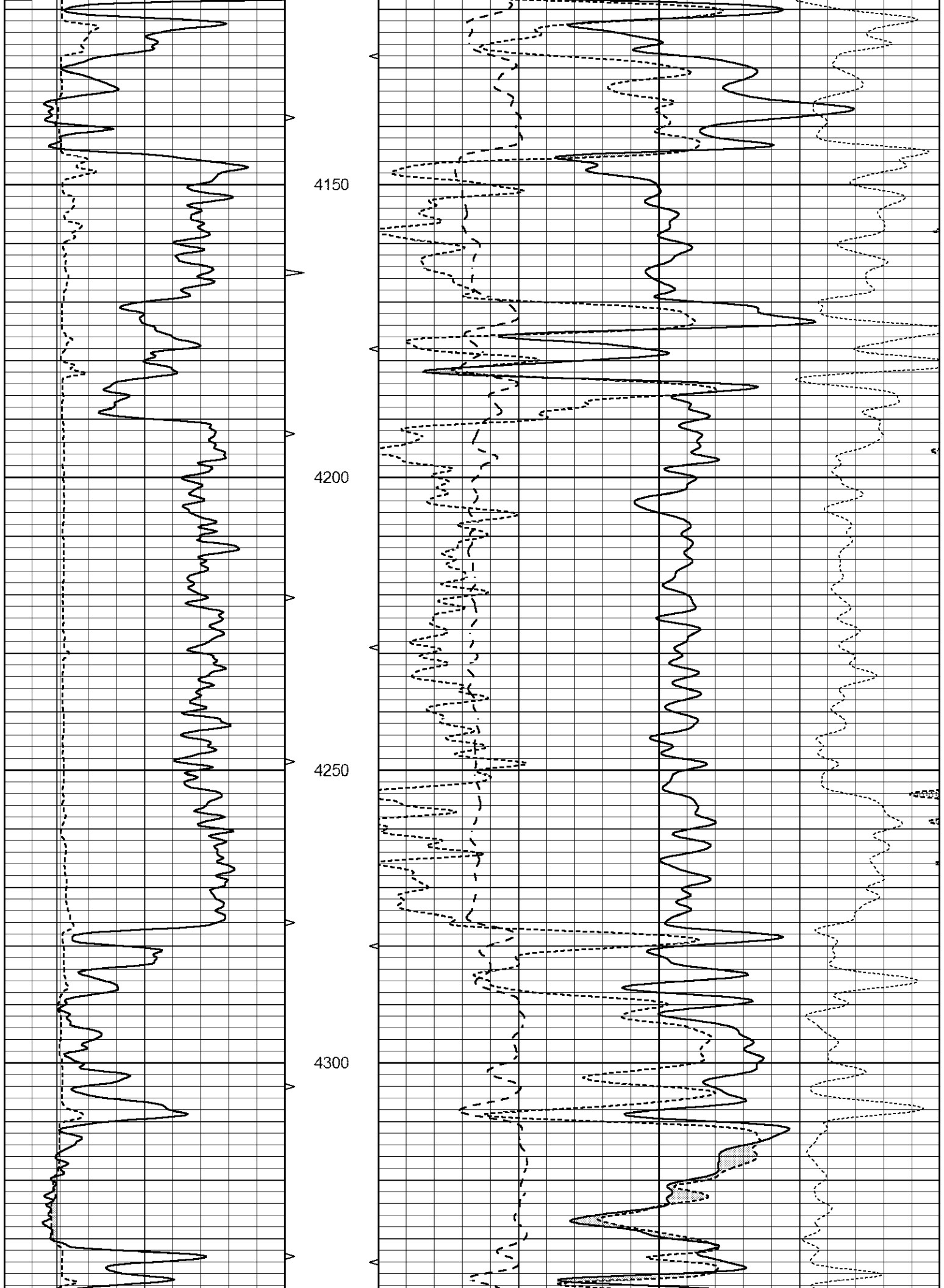

3050
3100
3150
3200

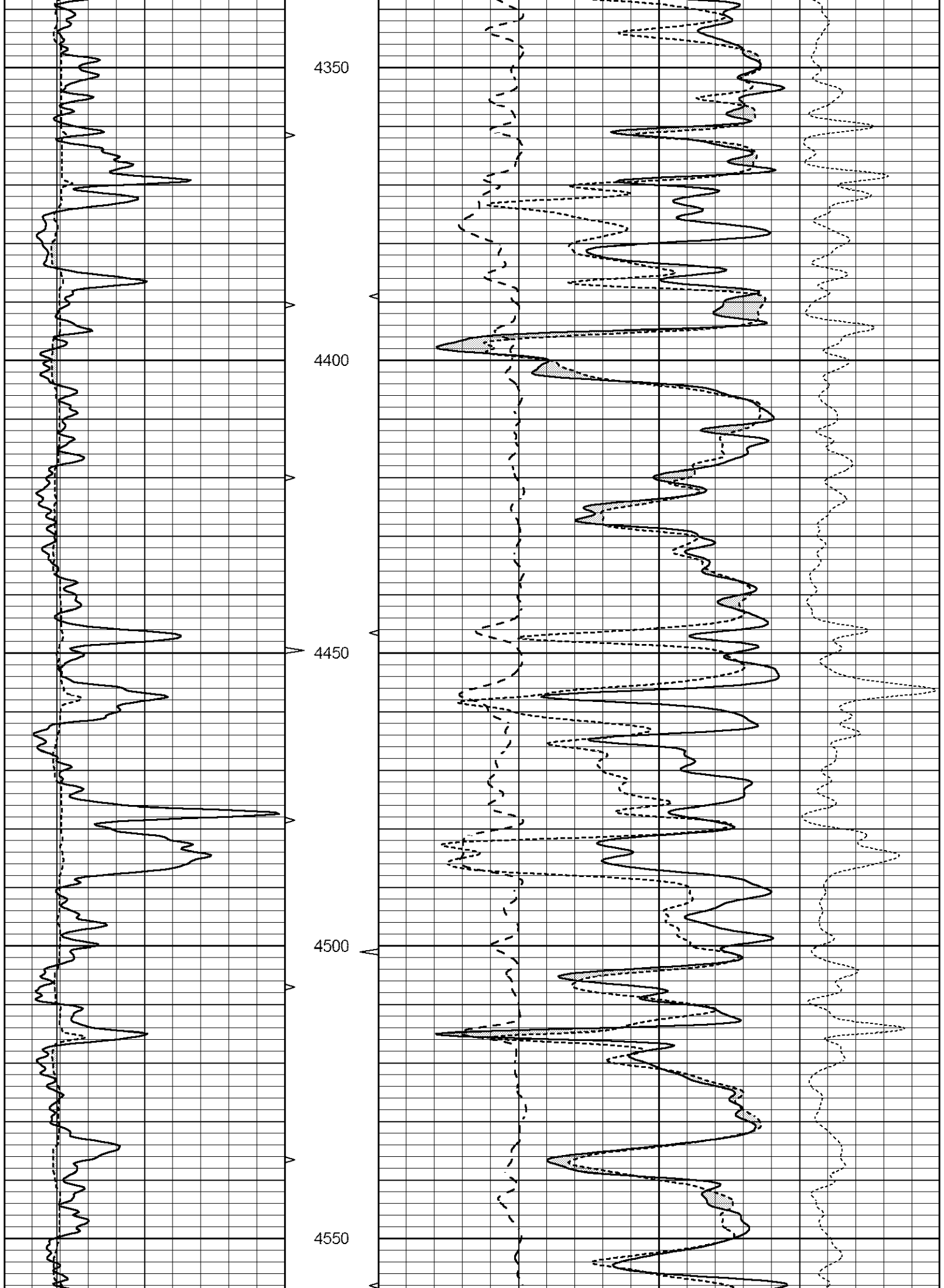

3250
3300
3350
3400
3450

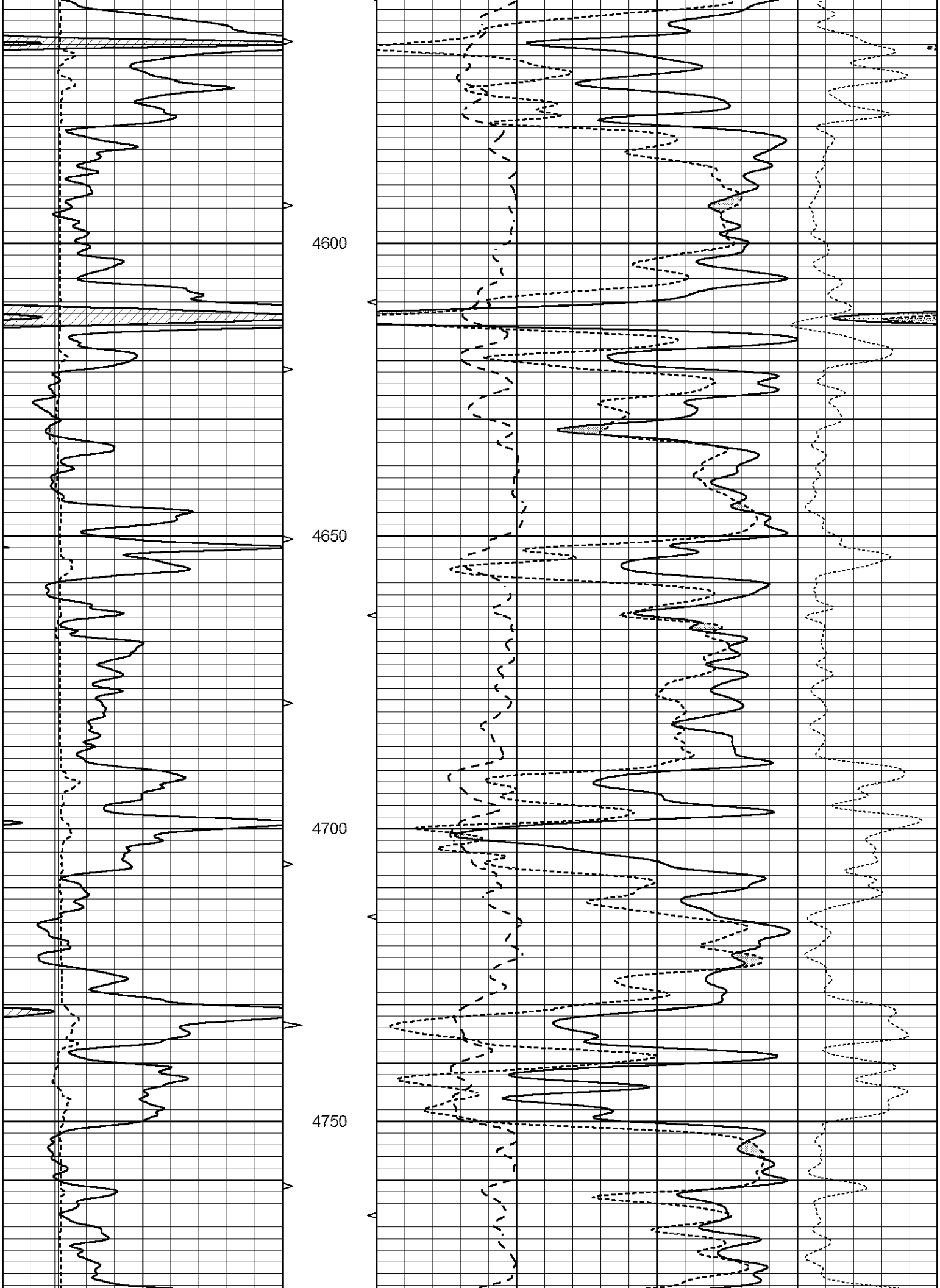

3500
3550
3600
3650

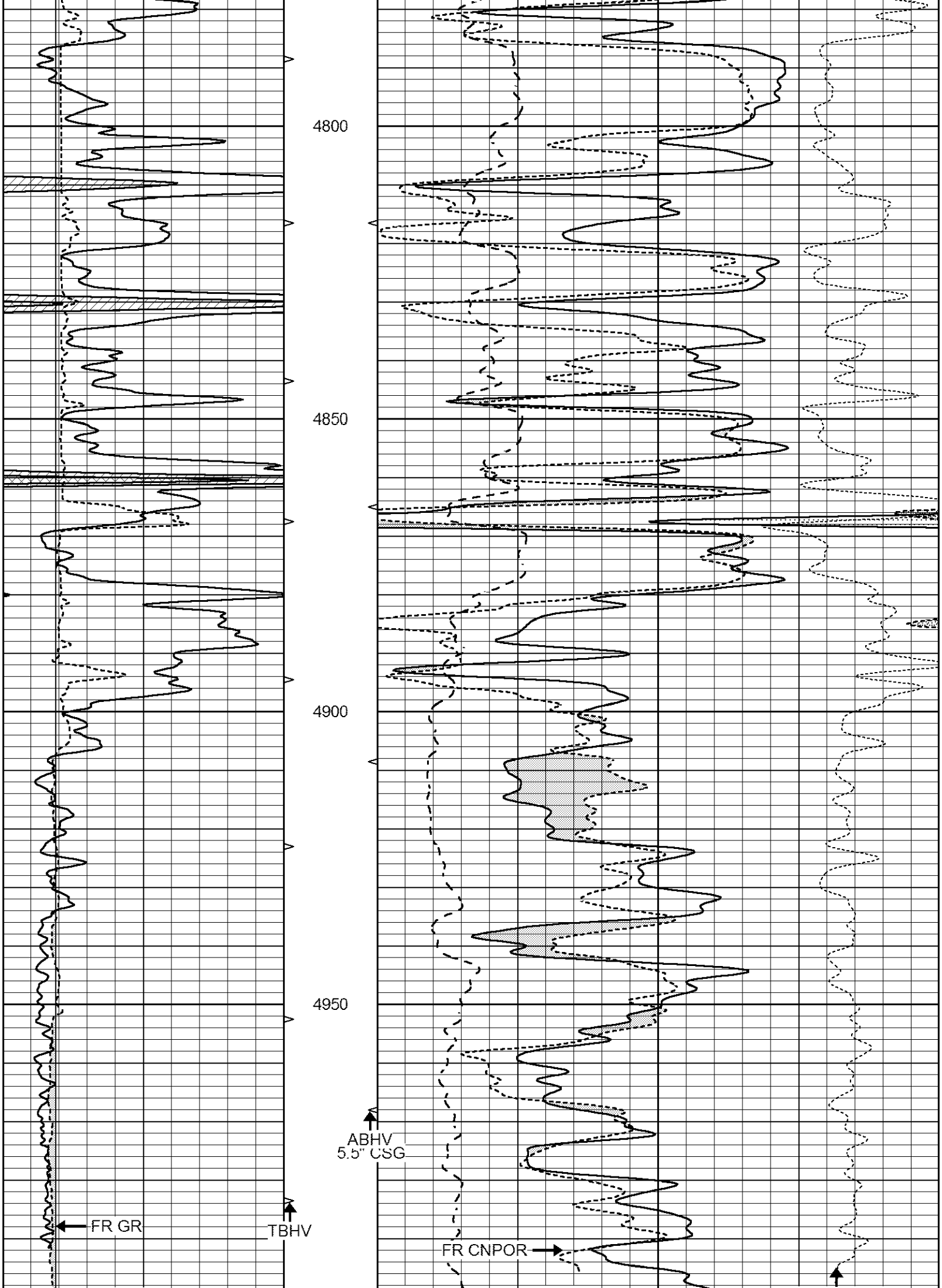

3700
3750
3800
3850

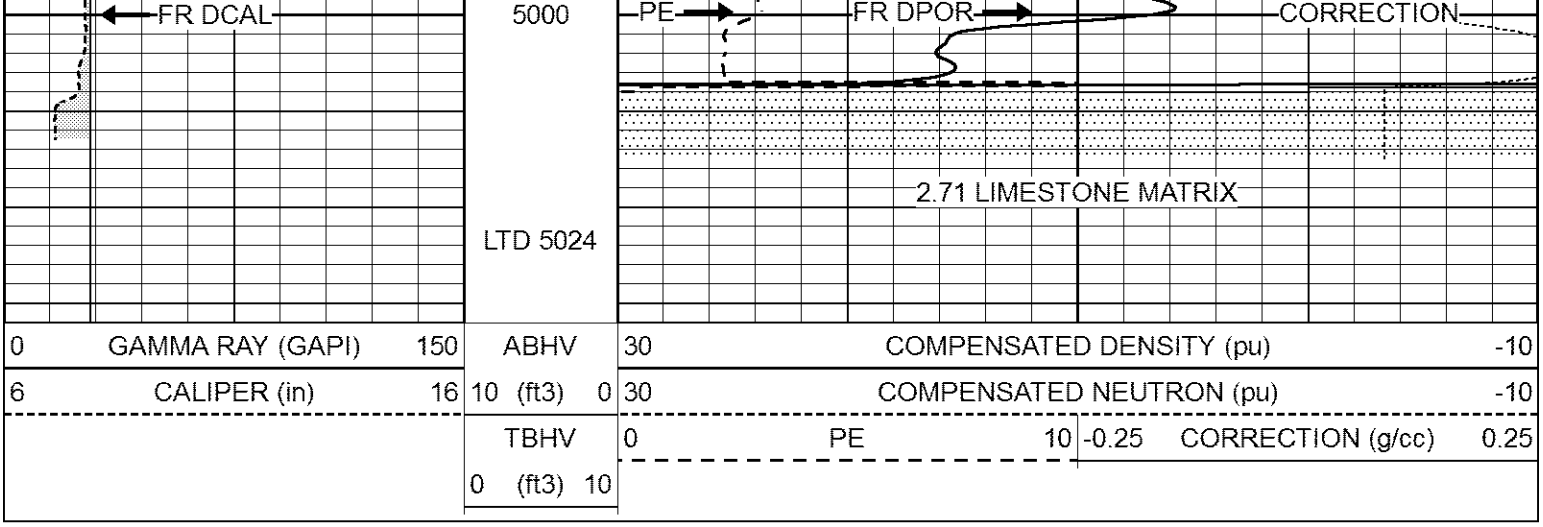

3900
3950
4000
4050
4100


4150
4200
4250
4300


4350
4400
4450
4500
4550

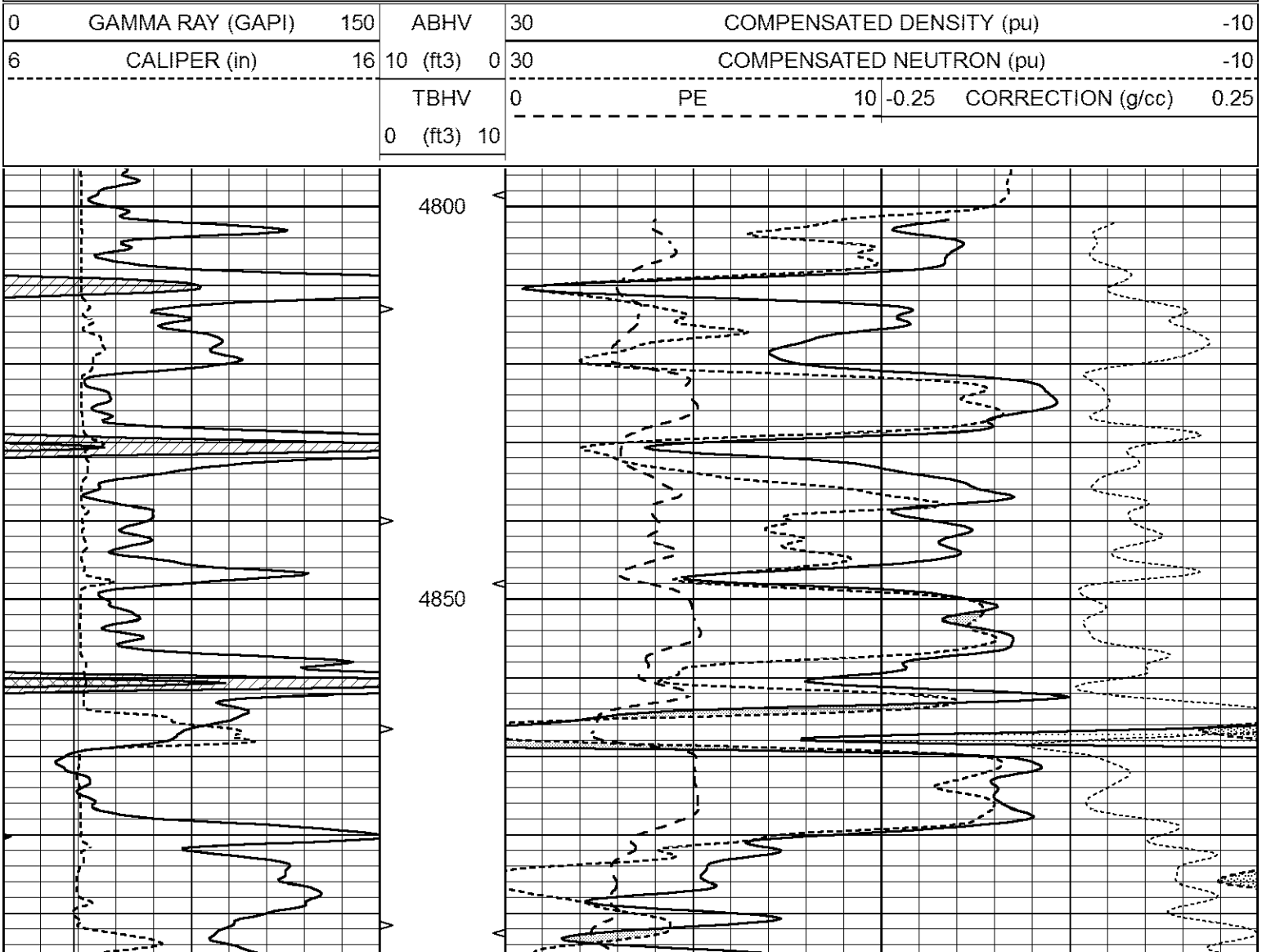

4600
4650
4700
4750

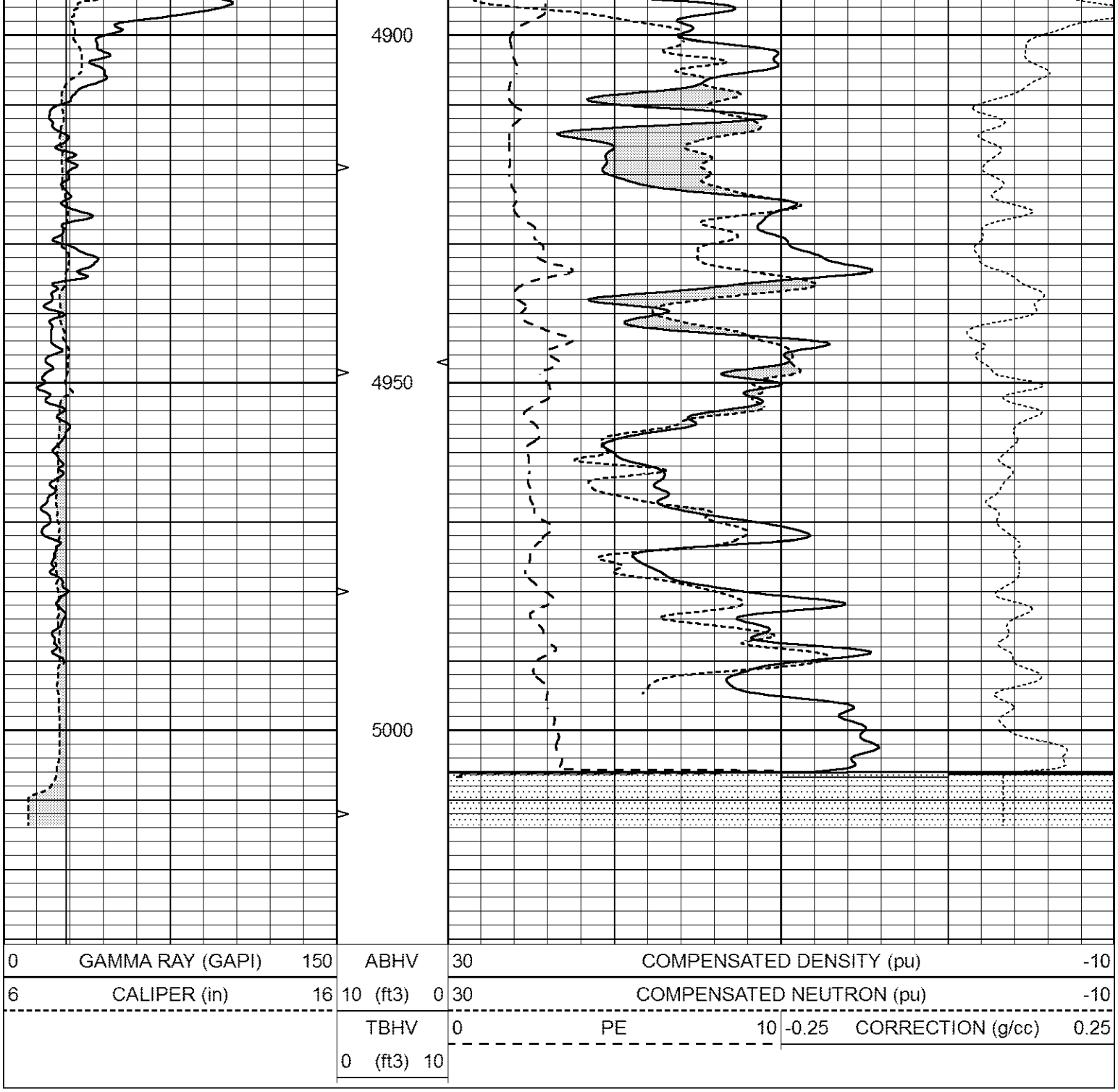

4800
4850
4900
4950
ABHV
5.5" CSG
FR GR
TBHV
FR CNPOR



REPEAT SECTION

Database File	3443pe8.db
Dataset Pathname	pass2.1
Presentation Format	_ldt_neu
Dataset Creation	Wed Feb 13 04:38:15 2019
Charted by	Depth in Feet scaled 1:240





Calibration Report

Database File	3443pe8.db
Dataset Pathname	pass2.1
Dataset Creation	Wed Feb 13 04:38:15 2019

Dual Induction Calibration Report

Serial-Model:	FW1410-55-Probe
Surface Cal Performed:	Mon May 22 14:23:32 2017
Downhole Cal Performed:	Thu Mar 12 09:29:20 2015
After Survey Verification Performed:	Thu Mar 12 09:29:20 2015

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	5.524

Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197

Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099
LL3		7.503	V		1500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.481	V		3745.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		3745.000	mmho-m		

Litho Density Calibration Report

Serial: 140704
Model: V4_10P
Source Number: 74GBq-19

Master Calibration — Performed: Fri Jan 18 10:53:52 2019

	Background	Aluminum	Magnesium	
Window 1	563.20	5403.39	24190.50	cps
Window 2	44.78	1243.51	6049.93	cps
Window 4	247.62	1222.40	5239.60	cps
Window 5	568.17	8975.27	17094.80	cps
Window 6	44.48	1484.88	2922.28	cps
Window 8	270.82	2877.34	5377.89	cps
Bulk Density	-	2.6020	1.6830	g/cc
Pe	-	3.0000	2.5070	b/e

LS Alpha:	: -1.8641	SS Alpha:	: -0.7692	LS CPE:	: 1.1004
LS Beta:	: 127931.7253	SS Beta:	: 20075.8142	SS CPE:	: 1.5209

Before Survey Backround Counts Verification — Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

After Survey Background Counts Verification — Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps

Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

Lithodensity Caliper Calibration — Performed: Fri Jan 18 10:53:52 2019

Results Readings		References (in)			
Low	High	Low	High	Gain	Offset
90.2	3611.6	8.0	14.0	0.0	7.8

Before Survey Caliper Verification — Performed:

	Reference	Reading
Caliper (in)		

After Survey Caliper Verification — Performed:

	Reference	Reading
Caliper (in)		

Compensated Neutron Calibration Report

Serial Number: 080621PMC
Tool Model: NABORS

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 7
Tool Model: Probe1
Performed: Wed Dec 05 01:26:33 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.4300 GAPI/cps